Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Original)   A method for processing a signal that includes X, Y, and intensity data sets for each pixel of said sensor from an image sensor receiving a substantially ring shaped image comprising the steps of, converting a signal having an X position, a Y position, and an intensity component to a signal having an angle, a radius, and an intensity and filtering out all signal sets that do not have a radius greater than a predetermined radius.

2. (Original)   A method for processing a signal as in Claim 1, wherein said converting step is accomplished by use of a look-up table for rapid conversion of X and Y pixel addresses to an angle and a radius.

3. (Currently Amended)   A method for processing a signal as in Claim 2, wherein said look-up table is loaded during initialization of [said] system.

4. (Currently Amended)   A method for processing a signal that includes X, Y, and intensity data sets for each pixel of said sensor from an image sensor receiving a substantially [ringh] ring shaped image as in claim [13] 3, comprising the further step of discarding all data sets whose intensity signal does not exceed a predetermined value.

5. (Currently Amended)   A method for processing a signal that includes X, Y, and intensity data sets for each pixel of said sensor from an image sensor receiving a substantially ring shaped image as in claim 4, wherein said predetermined value is set during calibration to include a range of values within an expected deviation of the radius of [said] a tube being analyzed.

6. (Currently Amended)   A method for processing a signal that includes X, Y, and intensity data sets for each pixel of said sensor from an image sensor receiving a substantially ring shaped image as in claim [14] 4, wherein said predetermined value is set during calibration to include only a range of values within an expected deviation of the intensity of a reflected signal.

7. (Currently Amended)   A method for processing a signal that includes X, Y, and intensity data sets for each pixel of said sensor from an image sensor receiving a substantially ring shaped image as in claim 4, further comprising the step of converting the analog output of an image sensor into a digital signal by synchronizing the clock of the image sensor with the intensity output to produce [said] a X and [said] a Y signal.

8. (Original)   A method for processing a signal that includes X, Y, and intensity data sets for each pixel of said sensor from an image sensor receiving a substantially ring shaped image as in claim 4, further comprising the step of storing at least one of each angle, radius, intensity and data set in a register for one of downloading and processing.

9. (Currently Amended)   A method for processing a signal that includes X, Y, and intensity data sets for each pixel of said [sensor from an] image sensor receiving a substantially ring shaped image as in claim 8, further including the step of storing in said register at least one of each angle, radius, intensity and data set which falls [wherein values] within a preselected range [are stored in said register].